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Claims

1. A method for detecting a property of at least one layer (301) of a
pavement (300), including:

measuring, in a position above said pavement, at least one flux of
radiation received from said pavement and energy levels or at least one range

5   within an energy spectrum of said radiation, said measured radiation
including γ-radiation emitted by at least one radio nuclide in or under said
pavement; and

determining information regarding said property from said at least one
measured flux and energy levels or at least one range within the energy

10 spectrum of said γ-radiation and predetermined reference data for providing a
relationship between at least one flux of γ-radiation of predetermined energy
levels or in at least one predetermined energy range and said property.

2. A method according to claim 1, wherein at least one γ-radiation

15 contribution or concentration of at least one individual radio nuclide is
determined from said at least one measured flux and energy levels or at least
one range within an energy spectrum of said γ-radiation and from said
reference data.

20   3. A method according to claim 2, wherein the radio nuclide is from a
group consisting of ^{40}K, ^{232}Th, ^{238}U and decay products of these radionuclides.

4. A method according to claim 2 or 3, wherein γ-radiation contributions
or concentrations of a plurality of individual radio nuclides are determined.

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5. A method according to any one of the claims 2-4, wherein said at least one γ-radiation contribution or concentration is determined by analyzing the energy spectrum of said measured γ-radiation, said reference data including at least one reference spectrum of a reference concentration of an individual radio nuclide.

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6. A method according to any one of the preceding claims, wherein said property is the thickness of said at least one layer (301).

10   7. A method according to claim 6, wherein said thickness is determined from a difference between the at least one measured flux and at least one reference value for said at least one flux, said at least one reference value being associated to a particular thickness.

15   8. A method according to any one of the preceding claims, wherein said property is the composition of said at least one layer.

9. A method according to any one of the preceding claims, wherein said composition is determined by analyzing the spectrum of said measured

20   radiation and comparing said spectrum with at least one reference spectrum for a pavement compound or constituent.

10. A system for detecting a property of a pavement, said system comprising:

25   a radiation detector (210-212) for measuring, in a position above said pavement (300), at least one flux of radiation received from said pavement and energy levels or at least one range within an energy spectrum of said radiation, said measured radiation including γ-radiation emitted by at least one radio nuclide in or under said pavement;

a signal processing structure (213, 214, 220) for receiving from said detector a signal representing said at least one measured flux and energy levels or at least one energy range of said measured γ-radiation and for determining information regarding said property from said signal and

5   predetermined reference data for providing a relationship between at least one flux of γ-radiation of predetermined energy levels or in at least one predetermined energy range and said property; and

an interface (224) for outputting data representing said property.

10   11. A computer system comprising:

an interface (225) for inputting data representing at least one measured flux of γ-radiation emitted by at least one radio nuclide in or under a pavement (300) and associated energy levels or at least one associated range within an energy spectrum of said radiation;

15   a database (223) containing reference data for providing a relationship between at least one flux of γ-radiation of predetermined energy levels or in at least one predetermined energy range and said property;

instructions for determining information regarding said property from said reference data in said database and said inputted data; and

20   an interface (224) for outputting data representing said property.

12. A computer program for use in a method according to any one of the claims 1-9, including:

instructions for reading inputted data representing at least one measured

25   flux of γ-radiation emitted by at least one radio nuclide in or under a pavement (300) and associated energy levels or at least one associated range within an energy spectrum of said radiation;

a database (223) containing reference data for providing a relationship between at least one flux of γ-radiation of predetermined energy levels or in at

least one predetermined energy range and a property of at least one layer (301) of a pavement from which said γ-radiation is received; and

instructions for determining information regarding said property from said reference data in said database and said inputted data.

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13. A data carrier device including data representing a computer program according to claim 12.